



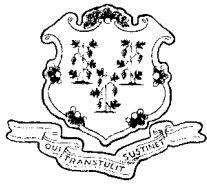
STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER MANAGEMENT  
PERMITTING & ENFORCEMENT DIVISION  
79 ELM STREET  
HARTFORD, CT 06106-5127  
860-424-3018

# **Guidance Document and Summary of Instructions**

## **General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water**

**Gina McCarthy, Commissioner**

Printed on recycled paper



# Guidance Document

## General Permit for the Discharge of Groundwater Remediation Wastewater to a Surface Water

This document is only a summary of key information and requirements that apply to the *General Permit for the discharge of Groundwater Remediation Wastewater to a Surface Water* (General Permit). If you are eligible to maintain a discharge under this general permit, it is your obligation to be familiar with all applicable requirements of the general permit. You should refer to the general permit and Section 22a-430 of the Connecticut General Statutes (CGS) and Sections 22a-430-3, 4, 6 and 7 of the Regulations of Connecticut State Agencies (RCSA) for a complete understanding of all requirements that apply to your facility. This guide is not a substitute for a thorough review of the general permit and applicable laws. In the event there is a discrepancy between this document and either the general permit or the applicable statutes and regulations, then the statutes, regulations and the general permit prevail and must be followed. Remember it is your responsibility to comply with all conditions of the general permit.

### Key Terms and Conditions

This general permit was developed to facilitate the remediation of contaminated groundwater and protect the waters of the state from pollution. In order to protect these waters of the state from pollution and protect drinking water supplies, conditions in the general permit require the following:

- In compliance with Section 19-13-B32(f) of the Connecticut Public Health Code, discharge cannot be directed to public water supplies, or tributaries to public water supplies under this Permit. If the discharge is proposed to be directed to a public water supply, please contact the Bureau of Water Management at 860-424-3018.
- The discharge must be directed to a stream with a minimum flow rate of at least 10 times the maximum discharge rate, or to a lake or pond with a volume of at least 200 times the maximum daily flow. Information regarding minimum flow (7Q10) may be available from a variety of sources, including the U.S. Geologic Survey ([www.usgs.gov](http://www.usgs.gov)), the DEP, or be calculated based on drainage area and geologic makeup of the stream's watershed. Volumes of other waterbodies can be calculated based on surface area and average depth, which may be available in DEP publications, or in local records. Dilution in estuarine waters may be based on the 7Q10 of the river feeding the estuary, be based on measured tidal flushing if available, or be based on site specific studies. It is recommended that a Registrant contact DEP for guidance when discharging to estuarine waters.
- The discharge must not be toxic to aquatic life as determined by whole effluent toxicity testing. Any discharge that exhibits toxicity may be directed by DEP to: perform additional monitoring; conduct and implement a toxicity reduction evaluation; submit an application for an individual NPDES permit; or cease discharge to the surface water.

- There are 2 different monitoring requirements in the permit.

The *Screening Analysis* refers to monitoring groundwater prior to any treatment. Screening Analysis is generally required prior to registration, and at specific intervals afterwards. If activities generating the discharge are the result of an emergency response to a release, the results of the screening analysis may be submitted up to 30 days after submittal of a registration. At a minimum, the Screening Analysis must include analysis for Volatile Organic Compounds (VOCs), Total Petroleum Hydrocarbons, Methyl tert-butyl ether (MTBE), Copper, Cadmium, Lead, Mercury, Zinc, Iron, pH, Temperature, Settleable Solids and Suspended Solids. Other monitoring parameters are to be determined by site history.

Since this screening analysis may be conducted prior to generating a discharge, samples may originate from numerous sources, including monitoring wells, groundwater seeps, accumulation in excavations, or in specific cases, data from soil sampling may be extrapolated to estimate groundwater pollutants. If soil data is used, immediately upon commencement of pumping, a verification screening analysis must be collected and analyzed.

*Effluent Monitoring* refers to monitoring conducted after the groundwater is fully treated. All discharges must be treated using technologies proven to remove any pollutant detected in the Screening Analysis at concentrations above the effluent limit(s) in the permit. Effluent monitoring must be conducted for any pollutant requiring treatment, and additional parameters, such as VOCs, Total Petroleum Hydrocarbons and Solids, in specific cases. The pollutant parameters to be monitored are dependant on both the initial and ongoing screening analysis, and may change as groundwater quality changes.

- Sites with complicated mixtures of organic pollutants may be required to monitoring for Tentatively Identified Compounds (TICs). Identifying and quantifying TICs allows this permit to be used when a pollutant is detected that is in a specific class of chemical (VOCs, Semivolatiles) but is not specifically identified in the Test Method's list of pollutants. TICs must be identified at sites only if they constitute a significant portion (10%) of the pollutant load or if the treatment installed is not known to be effective for the removal of the compound identified. If standards are readily available, laboratory analysis must include standardization for the TICs in question. If no laboratory standard is readily available, the tentative identification will be accepted and subject to the limits in the permit. If a significant concentration of an unidentifiable compound is detected, laboratory results and chromatographs may need to be submitted to DEP for review. Questions regarding this should be directed to Donald Gonyea of the Bureau of Water Management at 860-424-3827.
- One condition of the Monitoring Section pertains to "intermittent discharges of groundwater remediation wastewater generated from scheduled activities...". This primarily pertains to wastewater generated during monitoring well purging and sampling, but may include many activities that generate groundwater remediation wastewater. This may include conducting pump tests, decontamination of soil sampling equipment, draining of condensate, periodic aggressive well extraction activities (Hi- Vac), and other such activities. Normal cycling of a discharge that are the result of fluctuating groundwater levels generally are not subject to this section of the permit.

- Using a volume proportioned average as the monitoring result when applicable is intended to allow a permittee to reduce monitoring costs while insuring compliance with permit limits. A simple example is calculated as follows:

Example Calculation:

A facility has generated 100 gallons of purge water from 4 wells. Well-1 generated 20 gallons with benzene at 6.0 µg/l; Well-2 generated 30 gallons with benzene at 12.0 µg/l; Well-3 generated 5 gallons with benzene at 165.0 µg/l; and Well 4 generated 45 gallons with benzene at < 0.5 µg/l. For the purposes of this calculation the multiplier for results below detection are the detection limit, not zero.

A total volume of 100 gallons was generated ( $20 + 30 + 5 + 45 = 100$ )

Well-1 generated 20% ( $20 \text{ gallons} \div 100 \text{ gallons}$ ) of the total, which converts to a multiplier of 0.20.  
 $6.0 \text{ µg/l} \times 0.20 = \mathbf{1.2}$ ;

Well-2 generated 30% ( $30 \text{ gallons} \div 100 \text{ gallons}$ ) of the total, which converts to a multiplier of 0.30.  
 $12.0 \text{ µg/l} \times 0.30 = \mathbf{3.6}$ ;

Well-3 generated 5% ( $5 \text{ gallons} \div 100 \text{ gallons}$ ) of the total, which converts to a multiplier of 0.05.  
 $165.0 \text{ µg/l} \times 0.05 = \mathbf{8.25}$ ,

Well-4 generated 45% ( $45 \text{ gallons} \div 100 \text{ gallons}$ ) of the total, which converts to a multiplier of 0.45.  
 $0.5 \text{ µg/l} \times 0.45 = \mathbf{0.225}$ ,

The calculated average will be  $\mathbf{1.2 + 3.6 + 8.25 + 0.225 = 13.275 \text{ µg/l}}$  benzene.

Calculations would be performed for each pollutant parameter if a result from any well or other source of wastewater has a concentration which is greater than the permit limitation for that parameter. If limits are expressed as a group (such as VOCs, Semivolatiles, etc.), calculations must be conducted for each source for each parameter detected in that group.

- In addition to specific limitations, the permittee must implement Best Management Practices to prevent adverse impacts on the receiving water. Such impacts may include scouring of bottom materials, deposition of solids in the receiving water, etc.
- Groundwater monitoring programs may require that monitoring be conducted at properties adjacent to the registered site. Well development and purge waters generated at adjacent sites may be discharged under this permit if all permit terms and conditions are complied with. If however wastewaters are classified as hazardous, specific requirements may be applicable under state and federal law. If wastewaters to be transported are classified as hazardous, please contact the Bureau of Waste Management at (860) 424-3372.
- Groundwater from other sites or any other wastewaters cannot be transported to a site registered under this general permit without the appropriate permit or authorization.

- The General Permit requires that all monitoring results be submitted annually during the month of October. This includes the results of all screening analysis, effluent monitoring, toxicity monitoring and discharge logs generated during the previous 12 months. These results cannot be submitted electronically.

Reporting of Violations:

Details of specific requirements for the reporting of violations are found in section 5(f) of the general permit. In summary, all violations or toxicity failures must be reported within 2 hours of the permittee becoming aware of the violation. This notification may be made by phone. Within 48 hours, written notification must also be submitted. This notification may be made via email to DEP at [dep.ggrviolationreport@po.state.ct.us](mailto:dep.ggrviolationreport@po.state.ct.us), which for minor violations is preferable. Electronic notification is intended to expedite the review of reported violations, so that the need to cease discharges for minor, readily correctable violations is minimized. **Do not email general questions or other inquiries to this address.** Note that the discharge must cease within 48 hours unless authorized by DEP to continue, either in writing or via electronic response.

- *Conditions Requiring that the Discharge Cease:*

The permittee shall be required to cease discharge immediately if any of the following occur:

1. The violation is significant enough to potentially cause impairment of the receiving water;
2. An effluent limit is exceeded by more than 2 times, or the pH is less than 5.0 or greater than 9.5 standard units;
3. The discharge fails toxicity testing (less than 90% survival of organisms) on 3 samples in any 12-month period.
4. After reporting a violation, the permittee is not notified within 48 hours that the discharge may continue;
5. The violation is not corrected within 7 days;
6. The Commissioner directs the permittee to cease discharge.

In all cases, the permittee must keep a log of violations on-site, and submit a corrective actions report(s) to the commissioner. Serious or chronic violations also require that an appropriate environmental professional certify the corrective action.

All violations are to be reported annually with the submittal of toxicity evaluations.

- Aquatic toxicity monitoring must be conducted per the requirements of section 5(b)(7) of the general permit. All discharges that are intended to be long term (> 90 days) must conduct toxicity monitoring in accordance with the schedule in the general permit beginning at the commencement of discharge. If a discharge that is initially planned to be short term continues for more than 90 calendar days, the discharge must then conduct toxicity monitoring in accordance with the schedule in the general permit.

If a discharge fails toxicity testing (less than 90% survival of organisms), or is invalid due to laboratory quality control issues, retesting must be conducted within 30-days of the original test date. If three such failures occur in any 12-month period, the discharge must cease. In addition, upon review of toxicity data, DEP staff may determine that any or all of the following may be required:

- \* Re-testing and evaluation of the cause of any toxicity;
  - \* Conducting a Discharge Toxicity Evaluation;
  - \* Performing and implementing a Toxicity Reduction Evaluation;
  - \* Submittal of an application for individual NPDES general permit.
- Within fifteen days after the date a permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, such permittee shall supply the up-to-date information in writing to the Department at the following address:

PERMITTING & ENFORCEMENT DIVISION  
BUREAU OF WATER MANAGEMENT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
79 ELM STREET  
HARTFORD, CT 06106-5127

#### **Additional Clarifications**

- Discharge directly to surface water includes any discharge to surface waters, whether by a dedicated pipe, existing storm drainage, roof drainage, other discharge structure. It should be noted that if the conveyance is not owned by the discharger, the approval of the owner of the conveyance is required. If the conveyance is used for other discharge(s), compliance monitoring must be conducted at a point before the discharges mix.
- This general permit is intended to cover discharges from nearly any activity that discharges contaminated water from subsurface structures or soils in conjunction with activities associated with cleanup of pollutants that have been released. In addition to traditional pump and treat wastewater, this includes wastewaters that collect in underground structures such as vaults, building and manhole sumps, as well as activities such as decontamination of impacted stormwater conveyances.
- There may also be some apparent duplication of coverage under some circumstances with the General Permit for the Discharge of Water Treatment Wastewater. This may include pump tests, well rehabilitation activities, and discharges generated to evaluate water quality or yield. In general, these waters will be considered Water Treatment Wastewater unless the site is known or presumed to be impacted by pollutants, whether from on-site sources or as the result of pollutant migration. If pollution is known or presumed, wastewaters should be permitted as Groundwater Remediation Wastewater, even if no actual attempt to remediate the site is planned.

- This general permit includes a minimum frequency of sampling of untreated groundwater (raw water) for a range of potential pollutants on any given property. It should be stressed that this is a minimum and additional raw water samples may be required if indicated by site conditions. Such conditions may include: sudden fluctuations in groundwater flow; changes in location of raw water withdrawal; noticeable changes in groundwater quality; addition of new sources of groundwater remediation wastewaters; implementation of in-situ technologies; or any other site conditions that may indicate a significant change in pollutant concentration.
- The general permit requires that TICs (tentatively identified compounds) are monitored in all discharges if raw water screening indicates these compounds compose 10% or more of the total pollutant load. If raw water indicates lower concentrations, in most cases no effluent monitoring is required for TICs. This is based on the general similarity of the specific grouping of chemicals as far as treatability is concerned. The environmental professional responsible for the site is also obligated under the general permit to insure that any identified TIC is treatable and will not discharge in concentrations that will adversely impact the receiving water.
- There is broad category of pollutants other than those specified in the general permit that may need to be considered. This condition is expected to apply to few sites with unusual site history. It is likely that sites that may be impacted by these other substances will also have other complicating factors, which will make coordination with DEP crucial. Remediation efforts will need to be coordinated with both the Remediation Section of the Bureau of Waste Management and the Permitting Section of the Bureau of Water Management.
- Coverage under this permit will in most cases be immediate upon receipt at DEP of a complete registration. Coverage will require an Approval of Registration if:  

The site has a history of radiological impacts (this does not include naturally occurring radon, etc.), or

Chemicals are added for the treatment of groundwater (such as chelating agents, pH adjustment, etc.), or

Pollutants that do not have specific limits in the general permit are being discharged. Gasoline oxygenates and solids are excluded from this provision. Otherwise, the DEP may need to develop site specific limits for certain pollutants not otherwise covered by the general permit.
- The limit for Total Suspended Solids is managed differently from other limits in this General Permit. Exceedances of this limit must be corrected, but are not subject to the cessation of discharge requirements of this general permit. This allowance recognizes that minor exceedances of this limit are not likely to have a significant impact as long as toxic chemical pollutants are not also released. The Commissioner may however order the cessation of discharge as the result of such violations if warranted.

## DEP Contacts

A list of DEP contacts is provided in Appendix A. For general information and assistance, please contact our Engineer of the Day at (860) 424-3018 or the engineer most familiar with your facility.

## Appendix A: Permitting and Enforcement Division Phone Numbers for Information and Assistance

Name	Phone Number
24-Hour Emergency Response Unit	860-424-3338
Wastewater Treatment System Operational System, Modification, Bypass or Spill	860-424-3018
General Information, Assistance and Engineer of the Day	860-424-3018
Robert Kaliszewski, Ombudsman	860-424-3003
<b>Permitting &amp; Enforcement:</b> <i>Connecticut River Basin</i> Michele DiNoia 860-424-3816 Kima Kisilis 860-424-3805 Charles Nezianya 860-424-3846 Nisha Patel 860-424-3840 <i>Thames &amp; South Central</i> Ken Major 860-424-3843 Gary Leavitt 860-424-3841 Karen Leonard 860-424-3842 Laurene McEntire 860-424-3836 <i>Housatonic &amp; Southwest</i> Melissa Blais 860-424-3834 Kevin Barrett 860-424-3833 Steven Edwards 860-424-3838 Robert Lorentson 860-424-3281 Olympia Rea 860-424-3837 Donna Seresin 860-424-3267	
<b>Inspections:</b> Colette Ready 860-424-3824	
<b>Public Outreach, General Permits, Emergency Authorizations, and Administrative Support:</b> Arthur Mauger 860-424-3829 Donald Gonyea 860-424-3827 James Creighton 860-424-3681	
<b>Stormwater:</b> Christopher Stone 860-424-3850	
<b>Information Management:</b> <b>DMR Processing:</b> Suzette Flecha 860-424-3809	
<b>Toxicity:</b> Lee Dunbar 860-424-3731 Rosemary Gatter-Evarts 860-424-3732 Thomas Haze 860-424-3734	

## Quick Reference to Permit Assistance Resources

**Application forms, guidance and the *User's Guide to Environmental Permitting*  
are now available on the Internet.  
[www.dep.state.ct.us](http://www.dep.state.ct.us)**

### For general information about permits, contact:

DEP Office of the Ombudsman/Permit Assistance Office	860-424-3003
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### For specific DEP permit program information, contact:

Air Emissions - Air Permits Title V Helpline	860-424-4152 800-760-7036
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Water Discharges	860-424-3018
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Inland Water Resources - Diversion; Inland Wetlands and Watercourses; Water Quality Certifications; and Stream Channel Encroachment Lines	860-424-3019
Flood Management and Dams	860-424-3706

Office of Long Island Sound Programs - Coastal Programs	860-424-3034
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Waste Management - Solid Waste; and Asbestos Removal	860-424-3366
Hazardous Waste; Special Waste; and Waste Transportation	860-424-3372
Hazardous Waste Compliance Assistance Program (COMPASS)	860-424-4193
Marine Terminals	860-424-3298
Pesticides	860-424-3369

### For available resources, such as USGS topographical maps, etc., contact:

DEP Maps and Publications	860-424-3555
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### Other Useful Numbers:

CT Small Business Assistance Program	860-424-3003
DEP Environmental Equity Office	860-424-3044
DEP Office of Pollution Prevention	860-424-3297
EPA Region I Call Center	888-372-7341
EPA RCRA, Superfund and EPCRA Hotline – <a href="http://www.epa.gov/epaoswer/hotline">www.epa.gov/epaoswer/hotline</a>	800-424-9346
U.S. Army Corps of Engineers, New England Division - Regulatory/Permits	800-343-4789
Natural Resources Conservation Service, USDA	860-871-4014